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Journal of the Society of Arts.

FRIDAY, AUGUST 16, 1861.

INTERNATIONAL EXHIBITION OF 1862.

The Council beg to announce that the Guarantee Deed is now lying at the Society's House for signature, and they will be much obliged if those gentlemen who have given in their names as Guarantors, will make it convenient to call there and attach their signatures to the Document. Signatures for sums amounting in the aggregate to £426,300, have been attached to the Deed.

The following information has been received by Her Majesty's Commissioners :—

UNITED STATES OF AMERICA.

A joint resolution has passed both Houses of the United States' Congress, authorising the President to take such measures as he shall seem expedient to facilitate a proper representation of the industrial interests of the United States at the forthcoming Exhibition, and that a sum of 2,000 dollars is appropriated for the incidental expenses.

NOTICES TO INSTITUTIONS.

The Secretaries of those Institutions whose Members intend to join (with their friends) in the Excursion to the Crystal Palace, on the 27th inst., are requested to communicate with the Secretary of the Society of Arts without delay, stating the number of persons likely to be present.

The Council have communicated with every Railway Company whose line is likely to be traversed by the Excursionists from the Institutions, and have requested that such facilities may be afforded as will allow large numbers to take a part in the proposed gathering.

The arrangements for the supply of books, which had been temporarily suspended, are now renewed on the same terms as before, namely, a discount of $27\frac{1}{2}$ per cent. allowed off books, and 25 per cent. off periodicals, except where such periodicals are irregular in price, such as the Quarterlies, in which case trade price only will be charged.

Forms for ordering books may be obtained on application to the Secretary of the Society of Arts, to whom all orders should be sent.

THE BRITISH COLONIES AND THE INTERNATIONAL EXHIBITION OF 1862.

By P. L. SIMMONDS.

No. II.—THE NORTH AMERICAN COLONIES.

With the exception of Canada, the British North American Colonies may also be said to have been unrepresented at the Exhibition of 1851. New Brunswick, it is

true, sent a collection of raw and manufactured articles, principally grain and timber, but it was by no means a creditable display as regards the indigenous resources of the province. Nova Scotia, too, was poorly represented, and the collection from Bermuda was very small. Prince Edward Island did not appear. The Hudson's Bay Company may be said to have represented by their furs the whole territory of North-West America, which is now better known and appreciated by the colonies of the Red River Settlement, British Columbia, and Vancouver Island. The progress of British America in the past ten years, if not to be compared with the remarkable advance of Australia, has at least been steady and onward; agriculture, trade, and population have increased, and the material wealth and indigenous resources have been largely developed. The population of the British American colonies has increased, since 1851, by about one million and a half, and may now be taken at 4,000,000 souls.

In the past ten years, 235,285 souls have emigrated from the United Kingdom to the British American Colonies. The largest numbers left in 1851 and 1854, about 43,000 in each year. Within the past three years, there has been a general decline of emigration, and British North America has participated in this decline, only 9,000 emigrants, on an average, having proceeded there yearly. Many of these emigrants have probably crossed over into the States, but the number has in all probability been made up by negroes and other arrivals.

The value of the British exports to the North American colonies is now much the same as it was in 1851; but a large intercolonial and American trade is carried on. The progress of agricultural improvement in most of the colonies has been very great, and a considerable amount of wood land has been cleared in New Brunswick and Canada.

The timber trade is vigorously prosecuted, and shipbuilding actively carried on. Besides the large number of vessels disposed of, the comparison of vessels belonging to the North American Colonies stands as follows:—Owned in 1851, 5,460, registering 447,784 tons; in 1860, 6,779 ships and 600,224 tons. The extension of railways in Canada and the Lower Provinces has greatly facilitated the extension of trade and the progress of settlement. Canada has now about 2,000 miles in operation, and the increased value of real estate from this cause alone is estimated at over £30,000,000. The canals have been enlarged, the Victoria-bridge across the St. Lawrence constructed, and many public buildings and great work erected. The value of the Canadian imports has doubled in the past ten years.

In 1850, the collective value of the imports into each North American colony was as follows:—

Newfoundland	£723,599
Canada	2,337,620
Prince Edward Island	70,830
New Brunswick.....	726,691
Nova Scotia	824,022
	£4,682,762

In 1859, it may be stated at:—

Newfoundland	£1,172,862
Canada	6,542,669
Prince Edward Island	186,229
New Brunswick.....	1,162,771
Nova Scotia	1,936,176
British Columbia and Vancouver ...	200,000
Bermudas	141,203
	£11,341,910

The gold discoveries of British Columbia have greatly improved the resources of that new colony, to which great attention has recently been drawn, and her colonies on the Pacific are calculated to be of inestimable future advantage to Great Britain, both as a naval station and as populous fields of British industry and enterprise.

Canada made a highly creditable display at the Paris Exhibition in 1855, and will, no doubt, be equally well represented in London next year; 348 exhibitors occupied 3,145 superficial feet of space at Paris.

Sir Edmund Head, in a despatch, dated Government House, Quebec, April 25, states that he has referred all the documents connected with the proposed Exhibition to the consideration of his Executive Council. Petitions were presented to the Canadian Parliament praying that a sum of 40,000 dollars might be appropriated to enable the province to make a creditable appearance at the International Exhibition. The Board of Arts and Manufactures for Lower Canada is also moving energetically in the matter, and there is no reason to doubt that Canada will stand equally well in 1862 as she did at London in 1851, and at Paris in 1855.

Newfoundland has never taken any interest in these competitive industrial shows. It took no direct part in 1851—some samples of cod liver oil alone were shown—and yet many industrial products might be exhibited illustrative of the extent and varied character of its fisheries. Mineral products have also attracted some attention here. Its fish manure, cranberries and other wild fruits, as well as models of boats and other articles of native manufacture might be exhibited.

As respects Prince Edward Island, Lieut.-Governor Dundas, in a despatch to his Grace the Duke of Newcastle, dated March 28, states that his Government will gladly co-operate with him in taking the necessary steps for the furtherance of the important objects of the Exhibition. With this in view, a competition will be invited among those who are in a position to supply the best specimens of the Industry and Natural Productions of the Colony. This competition is to take place soon after harvest, so as to allow a contribution of the various cereals of this year's growth. In addition to the finest samples of corn, wheat, &c., the staple produce of this island, the Governor states that he would also endeavour to select some specimens of the best woollen manufacture, as also of furnitures made in the colony out of native woods. These, he adds, will comprise the principal, if not the only contributions of Prince Edward Island. As the navigation closes here during the winter, and does not open sufficiently early in the spring, it will be necessary to ship these articles in the month of November.

In Nova Scotia the Right Hon. the Earl of Mulgrave has been most zealous in bringing the matter forward, so as to have the colony which he administers duly represented. Early in the year his Excellency brought the subject under the notice of his Government who, gave it their best attention, and at once laid it before the Legislature. Since then endeavours have been made to procure such specimens of the industry of the country as will tend to the credit of the colony. In a subsequent despatch, dated June 13, Earl Mulgrave informs the Duke of Newcastle that he has appointed the following gentlemen a Local Commission for the purpose of communicating with the Royal Commissioners in England, and also obtaining the best possible selection of articles for exhibition from Nova Scotia:—Hon. Jos. Howe, *Chairman*, A. G. Archibald, B. Wei, Dr. C. Tupper, John Esson, John Tobin, the Mayor of Halifax, P. C. Hill, Jas. A. Bell, W. Cunard, R. Moron, A. M. Uniacke, Jas. Thompson, and A. McKinlay. It is probable, he adds, that he may find it desirable to add to the list hereafter. No exertion will be wanting on his part for furthering this important object.

Nova Scotia will have some new products to show. Among others, specimens of her recent gold discoveries, a very beautiful bracelet, manufactured by Mr. W. H. Newman out of Tangier gold, has been made for Lady Mulgrave, the workmanship of which reflects much credit.

At the meeting of the New Brunswick Legislature, at Fredericton, on the 12th February, the Lieut.-Governor's speech contained the following paragraph:—“Under the provisions of the Act to establish a Provincial Board of

Agriculture, the First Provincial Exhibition will be held this year. You may deem it wise to consider whether the inquiries and arrangements connected with this exhibition may not be combined with preliminary steps for the representation of the Province, both in natural products and articles of manufacture, at the Exhibition in London next year.”

In July, the Governor announces the appointment of the following Local Commissioners:—The Hon. A. E. Botsford, Sackville, county of Westmoreland; James G. Stevens, Esq., St. Stephens, county of Charlotte, Secretary; Robert Jardine, Vice-Chairman, and Alexander Jardine, Esq., city of St. John; H. P. Bridges, Esq., Sheffield, county of Sunbury; Hugh McMonagle, Esq., Sussex, King's County; Wm. Napier, Esq., Bathurst, county of Gloucester; and J. Micheau Keator, Esq., Sussex, King's County.

The Provincial Board of Agriculture, of which the foregoing gentlemen are the Executive Committee, has since applied for the large area of 20,000 feet to be allotted for the use of the province of New Brunswick, as the probable space required, together with a wall surface of 300 feet.

The first exhibition of the Provincial Board of Agriculture is to be held at Sussex-vale, on the 1st October and three following days. The premium list, which is now before me, offers rewards for the best specimens of the following:—Raw materials—Best collection of New Brunswick minerals; ditto, useful minerals; combustible minerals; mineral paints, clays, and sand; best collection of building stones, dressed 10-inch cubes; ores or metals; bricks, tiles, pottery, and salt; manufactures chiefly in metal; agricultural implements; cutlery and tools; nails and horse shoes; steam engines; fire and garden engines; lathes; sewing machines; clocks; philosophical instruments. Vegetable kingdom—Grains and agricultural seeds; roots; dried and preserved fruits; hops, &c. Manufactures, chiefly in wood—Agricultural implements; dairy utensils, Cooper's work and shingles; clapboards; veneers; cabinet work; carved work; pumps; blocks; turners' work; basket work; musical instruments; looms; carts, waggons, and sleighs; four-oared and six-oared gigs; models of known ships; bark canoes; models of farm buildings, saw mills, wind mills, &c.; and best assorted collection of native woods. Amongst the miscellaneous manufactures to be shown are—Flours and meals; starches; maple sugar; biscuits and confectionery; grass and straw plait hats and bonnets; matting; cordage; paper; linen and cotton goods; native dye-stuffs and colours; cider and vinegar; live-stock are also to be shown; salted provisions, butter, and cheese; wool; oil; glue and isinglass; honey and wax; quill and hair work; horns and horn work; feather and down work; hatters', tailors', milliners', dyers', bookbinders', and other work; candles and soap; leather, furs, and skins; blankets, flannel, carpets and ruggings, woollen cloth, hosiery, mixed and homespun; dried, smoked, pickled, and preserved meats; and stuffed birds and other native animals.

In Fine Arts—Oil paintings; water-colour, crayon, and pencil drawings; photographs; engravings; lithographs; sculptures; architectural and engineering drawings and designs, &c.

This show is to be preliminary and subservient to the collection for the International Exhibition, and from the variety and amount of the premiums, it promises to be most interesting and useful in developing the local resources and ability of the Province. 4,000 dollars have been voted by the Government for procuring suitable articles to be sent to London.

A recent number of the leading provincial journal, the *Courier*, of St. John, thus speaks of the matter:—It is to the fact that she was well represented at the last World's Exhibition that Canada occupies so prominent a position, and receives at the hands of influential men and capitalists so much attention. The productions of Canadian skill and genius created a feeling of inquiry in the minds of those who had previously been but indiffer-

ently acquainted with her position and resources; and the result has been a steady progress thereafter. If the fact of Canada being well represented at the last World's Exhibition has produced satisfactory results—and who can doubt it—will not the same cause produce a like effect upon New Brunswick? Most assuredly it will; and should we not, then, one and all, strive by every means in our power to have the Province well and respectably represented at a similar exhibition to be held in London next year? However, to do this more effectually it is necessary that we should, at the Provincial Exhibition to be held in Sussex-vale in October next, have our various manufactures, agricultural productions, etc., numerously and creditably represented. Cannot almost, if not every, mechanic throughout the Province prepare some specimen of his skill and industry? Cannot every agriculturist present some samples of the products of the soil? Cannot every artist prepare for exhibition some specimens of his genius? Cannot every manufacturing institution display before the gaze of the numerous assemblage of persons who will undoubtedly attend both exhibitions, something to be admired? Doubtless all can do something; and, when the advantages to be secured to the Province by a creditable display of our various products are clearly understood, those who fail to assist will be few indeed.

If ever there was a time when New Brunswick had a chance to become widely, and her varied resources more generally appreciated, it is the present. The recent visit of the *heir-apparent* to the British throne to the North American Provinces has attracted to New Brunswick no small degree of attention. The Prince and his illustrious suite were favourably impressed with the appearance of the country and its various advantages both natural and acquired; so also was the talented correspondent of the *Times*, and this latter personage gave expression to his views relative to our commercial, agricultural, and other advantages, in a manner highly eulogistic. To merit a continuance of this good opinion, and to secure to the Province increased advantages, it is necessary that those who represent the "bone and sinew" of the country should bestir themselves. Considering the importance of the forthcoming exhibitions to the material interests of the Province, we cannot, in a style too eloquent or a manner too earnest, urge upon those who can do something the necessity of entering into the matter heartily, vigorously, and with becoming earnestness.

The internal discord and dissension which now prevail in the United States will prevent the people of that country from being as fully represented at the World's Exhibition as they otherwise would, and will afford New Brunswick and the other Provinces, if properly represented, a better opportunity of making a favourable impression upon the minds of myriads who will throng from all parts of the world to view the various specimens of the ingenuity and skill of human hands which will there be presented to view.

Another paper, the *Colonial Advocate*, on the same subject says:—"We are very much in the habit of talking in exultant terms of the fine province we live in; and the *Times* correspondent last year told the reader of that paper how surprised he was at the rich agricultural aspect of the St. John river scenery; but John Bull is a man of facts, and not very easily led away by appeals to the imagination. If we, therefore, wish to prove on the other side of the Atlantic that we have a climate suitable for agricultural purposes, we must send samples of grain of different kinds, and flour made from our home-raised grain as well. When an Englishman handles wheat, and sees it in the New Brunswick department, it is sufficient proof of what our climate is capable of. So of any of our manufactures. Let well-made articles be exhibited, and our civilisation and our progress will be manifested better by the comparison of them with the workmanship of others, in similar departments, than if Prof. Johnston's Report could be given to everyone who will enter the Crystal Palace. His Excellency the Lieut.-Governor has remarked that he

was never more impressed with the capability and importance of the Canadas than when he visited the Canadian department in the Crystal Palace, in 1856. Canada has had a rebellion—England lost one of her most heroic generals in Canada—but it took a tangible exhibition of the products of her fields and workshops, before the people of Great Britain could be made to fully realise what she could do; and New Brunswickers must be fully awake to this system of advertising their country if they want their great lands occupied by thriving farmers."

An official notice, advertised in the principal journals of the province, states that "the Provincial Government, having decided that New Brunswick should be properly represented at the Great Exhibition in London in 1862, and having authorised the Provincial Board of Agriculture to receive, select, and prepare such articles as will best accomplish such object, the Board invite the co-operation of all persons disposed to become private exhibitors, and will take charge of any articles coming within the conditions required by Her Majesty's Commissioners in charge of the London Exhibition, viz., every article produced or obtained by human industry, whether of raw materials, machinery, manufactures, or fine arts. All articles must be sent to Mr. George McLeod, Custom-house, the agent at St. John of the Board appointed to receive them, on or before the 15th January next, preparatory to being transmitted to London by the Provincial Government."

Mr. Stevens, the Secretary of the Provincial Board of Agriculture, seems to be indefatigable in his exertions to draw forth the latent energies of the Province, and to promote its best interests. He has been publishing several very valuable statistical documents and letters in the colonial papers. In one of these he observes:—

"It is to be hoped that Agricultural Societies will exert their influence in stimulating their members, to show what can be done in the way of agricultural production; that the mechanics will show that they are capable of executing work in their various departments, that will bear comparison with the workmanship of any country; while in the fine arts, we hope to convince the multitude that the finest specimens of the skill of any country can here be witnessed, executed by the artizans of our own Province, who too often toil in comparative obscurity."

"We consider the coming Exhibition as most timely, as there seems to be a tide of emigration setting towards our Province; but I cannot help feeling, with all that has been said and written upon the all-important subject of immigration, and notwithstanding all the liberal provisions made for the encouragement of some, that the all-important point has not been sufficiently attended to, or noted, viz.: the establishment of factories and such like works to give the emigrant ready employment, and retain him by means of such employment. We want the attention of capitalists drawn to the erection of cotton and woollen factories, to boot and shoe factories, and such like operations, and our fine streams applied to practical account in other ways than only in driving sawing machines.

"It will, perhaps, be an under-estimate to say that there are imported into our province, of boots and shoes alone, the value of seventy thousand pounds. Why is it that such a manufactory is not established on an extensive scale? By the returns before me, it appears that the value of boots and shoes used annually in our province is £89,000 and upwards; how many of these are manufactured in our own province?

"Of breadstuffs and grain there appears to be imported annually the enormous amount of £36,300; of meats, salted, cured and fresh, £69,000 and upwards. We might mention many other departments in which employment might be afforded to thousands, and whereby much of the wealth of our country might be retained."

A public meeting of artists, mechanics, and agriculturalists, was held in St. John at the close of June, at which a lively interest was manifested in the success of the Exhibition, and the following amongst other resolutions were passed:—

"That for aiding the prosperity of Agriculture, enlarging the inducements for immigration, and advancing the welfare of the Province in general, it is highly important to give every encouragement in our power to such home manufactures and mechanical productions as are suited to the wants, capabilities, and condition of this country."

"That farmers, and all who feel an interest in the agricultural welfare of this country, should employ their best efforts to make the Exhibition to be held at Sussex as creditable as possible."

"That it is greatly for the interest, and should be the aim of our mechanical operators, to furnish at the Provincial Exhibition, to be held in Sussex, in October next, productions of their best skill and workmanship."

"That for developing the resources and promoting the prosperity of this rich and flourishing province, and to bring its capabilities more prominently before the parent countries of Great Britain and Ireland, a vigorous and united effort should be made to furnish, and forward, to the Great Exhibition to be held in London in 1862, an extensive and well-chosen selection of the natural and artificial products of this country."

Passing now to the Pacific side of the continent we find that in Vancouver Island a large sum, for so small a colony, £1,000, has been officially voted towards the expenses, and subscriptions are also being collected. An Association has been formed for especially attending to the matter, an Executive Council appointed out of the General Committee, and four Sub-Committees of six gentlemen assigned for particular duties, industrial resources, minerals, Indian productions, and agriculture. The sum of £50 has been voted for the best Essay on the resources of Vancouver Island and British Columbia, and a small sum for printing it for distribution at the Exhibition. Circulars explanatory of the objects of the Association have been published and sent round the country.

The Executive Committee have drawn out an excellent list of articles, crude and manufactured, specimens of which they deem desirable for transmission to England, to represent the industrial resources of these colonies at the Great Industrial Exhibition in 1862. In their circular they direct public notice to one of the features of the Industrial Exhibition, viz., that of rewards for articles deemed worthy of special commendation for their goodness, their usefulness, for their ingenuity, for their commercial value, or as showing the adaptability of materials not previously known in supplying some common want.

Two methods of obtaining collections will be adopted :

1st. Specimens contributed to or purchased by the Association;

2nd. Specimens lent to the Association, of which due care will be taken, and which will be returned to the owner, or disposed of to the best advantage in England. All articles will be labelled with the name and address of the donor or lender, and will be conveyed to England in the same state as sent to the Association here, who will bear the expense of their transmission.

The Executive Committee trust to see specimens of our colonial produce, which, with care in their preparation, may enter into competition with similar articles of European or other colonial production, with a fair chance of winning, if not a *premium*, at all events that commendation from the gathering of all nations at the Great International Exhibition which would tend more than any other means to direct the attention of emigrants towards these colonies.

In reference to Canada, with which we have much in common here, Mr. Wallis, Head Master of the Government School of Art, Birmingham, and Deputy Commissioner of Juries in the Great Exhibition of 1851, speaking of the Exhibition of Art-industry in Paris in 1855, says : — "Probably the most complete display of colonial produce, properly so called, is that of Canada. Improving upon the experience of 1851, and satisfied that the exhibition of its products on that occasion had been of immense value to its commerce, the Colonial Legislature voted a large sum of money. * * * The result is a most useful and even tasteful display of trans-atlantic utilities and products. Among the former may be quoted a deal window-frame, with sashes and Venetian shutters,

manufactured by machinery, for sixteen shillings English, and a door frame, door and finishings of the same material, and manufactured in the same manner for about seventeen shillings. The workmanship is perfect in every respect. Such is the result of the application of machinery to the working of wood as practised in the United States and in Canada. The edge-tools also of Canadian manufacture took a higher position in the opinion of the Jury than those of England, and those stood relatively twice as high numerically as those of France. The woods of various kinds, many of them highly ornamental, and all useful, carefully cut into slabs and polished, form another useful feature in the Canadian department," &c.

The Executive Committee confidently anticipate that a large amount of public attention will be centered on the exhibition of the products of Vancouver Island and British Columbia, and they ask the zealous help of all towards worthily representing our native resources and aiding in the development of a land which in many ways is fitted to take a not unimportant part in the world's future history.

List of articles that may be contributed from Vancouver Islands and British Columbia :—

AGRICULTURAL.—Wheat, barley, oats, peas, beans, rye, hops, of these not less than one bushel of each. Roots, generally. Seeds (indigenous). Fruits. Wool. Preparations of any kind adapted for food, such as oatmeal, pearl barley, biscuit, &c. Island made beer or ale. Cheese, butter, &c. Native hemp, or flax, or any other product adapted for making textile fabrics.

FISH.—Salmon, codfish, herring, sardines, halibut, prawns, houlakans, oysters, or clams, dried, salted, pickled, or cured in any other way. Oil, procured from the whale, dogfish, houlakan, or fish of any kind.

WOOD.—Spars for shipping or other purposes. Sections of native timber, plain, polished, or varnished. Plain and ornamental articles manufactured from native timber. Resins, pitch, &c.

STONE.—Slate, sandstone, granite, limestone, or marble, slabs of, or manufactured into useful or ornamental articles. Grindstones, whetstones, &c.

MINERALS.—Gold, copper, silver, plumbago, coal. Salt, natural and prepared. Clays, adapted for potteries, bricks, &c., and articles made from the same. Manufactured articles of gold, silver, copper, &c., produced in these colonies. Articles of colonial manufacture, of foreign gold, silver, &c.; plumbago as pencils.

FABRICS.—Cured hides and skins—The same adapted for, or manufactured into, articles of daily use, such as harness, boots, shoes, &c.

MISCELLANEOUS.—Specimens of horn of elk, deer, &c.—Articles manufactured of the same. Bark, for tanning purposes. Dyes. Medical preparations. Preparations of island fruits, such as cranberries, raspberries, currant, sallal, Oregon grapes, strawberries, native plum, &c. Preparations of island vegetables. Paintings, showing the use of any new pigment. Photographic pictures. Models of island vegetables, &c., in plaster or wood. Natural history specimens, such as birds, animals, insects, fish, plants, &c.

ARTICLES INDICATING INDIAN HANDICRAFT, VIZ.—Manufactures of slate, wood, skins, hair, such as mats, &c., cedar-bark, such as hats, tippets, baskets, fishing-lines, ropes, &c., rushes, and grass.

His Excellency Governor Douglas, who is President of the Commission appointed here, took the chair at a public meeting held on the 12th February, at Victoria, which was numerously attended. In his address he stated that he had experienced much pleasure in acceding to the request to preside at a meeting summoned for so good an object as the proper representation of British Columbia and Vancouver Island at the Great Industrial Exhibition to be held in London in 1862. "Connected (he observed) as I have so long been with the direction of affairs in British Columbia and Vancouver Island, and having so large a stake in these countries, I cannot but feel a deep personal interest, apart from the official position which I

have the honour to occupy, in everything which tends to promote the success and progress of these colonies. Very little is known at home of the great extent and abundance of our natural resources, and that little known only to a few. I can conceive nothing which would so tend to bring these colonies face to face with the general public at home, and the world at large, as a proper representation of our natural products and industrial resources at the Great Industrial Exhibition of 1862. It will give me great satisfaction to do all in my power to further the objects of this meeting, which I so cordially approve. With this view I have thought it expedient on public grounds, not only to sanction the use of offices and a place for storing the various collections that may be contributed for transmission home, but I am also disposed to sanction such pecuniary assistance in aid of private contributions as may be granted out of the public treasury, consistently with the existing state of the public finances. And I have reason to believe the House of Representatives is not indisposed to make such an appropriation."

A public meeting for the colony of British Columbia was subsequently held at New Westminster, on the 26th Feb. Governor Douglas presided, and Col. Moody, the Lieut.-Governor, occupied the vice-chair, when various resolutions were passed, and it was determined that the aid of the inhabitants of British Columbia, irrespective of nationality, be solicited, with an united effort to render justice to the merits of the Colony by creditably representing it at the Exhibition with samples and specimens of its numerous and varied resources. It was, however, the general feeling, that the collection and transmission of articles for representing British Columbia should be made independent and irrespective of Vancouver Island.

A local exhibition is to be held before the articles are dispatched to England. Offers to take the contributions home freight free have been made and accepted.

FLAX AND ITS PRODUCTS IN IRELAND.

By WM. CHARLEY, J.P., SEYMOUR-HILL, NEAR BELFAST.

APPENDIX TO LETTER XVI.*

According to Mr. H. S. Tremenheere's report, the number of people employed in the Irish bleachmills is 4,183, of whom 1,100 are females, and 271 boys, leaving for adult males 2,812. Assuming that each adult male represents about 1,000 pieces of cloth being bleached annually, it would appear that about 2½ millions of pieces are bleached each year, worth, probably, nearly £4,000,000.

A large quantity of low-priced linen is exported brown, as received from the looms; another class is slightly tinged yellow by steeping in dilute muriate of tin and catechu, and then finished or glazed by the beetling process already described. The former are technically called "rough browns," and are, I believe, used for blouses. The latter styled "hollands," much used for window blinds; but, in addition to yellow holland, we hear of "slate holland," "blay," "drab" and "black" ditto. I need scarcely say the first of these only resembles slate in colour, and this colour is attained by dyeing the cloth in the ordinary way.

I believe that drab colour is produced by using fustic, after what is called iron liquor, *i.e.*, acetate of iron. For black this acetate is used diluted, to stand five of Twaddel's Hydrometer; then dry the cloth, wash and plunge in a logwood bath. For slate colour, divi divi, or shellac, after the iron liquor.

Messrs. Wm. Kirk and Son, Keady, Armagh, are, without doubt, the largest finishers of these brown and coloured goods. The number of beetling engines they keep employed is very great, probably 180 to 200. The neighbourhood of Armagh is noted for this class of linens, and at the weekly markets held there large quantities of goods are sold to the finishers, who prepare them for the

English and Foreign trade. Messrs. Kid, of Keady, Armagh, have been also largely engaged in this business, and there are several other large establishments about Ballymena, county Antrim.

The dyeing or printing of linens is, to use the words of Dr. Ure, "A chemical art;" a very important part of the process is the correct application of the mordants, or, as he explains, "the substances which are used, previously applied to piece goods, in order that they may afterwards take a required tinge or dye." Of course, if the mordants be universally applied over the whole cloth, and it afterwards is plunged into the dye, an even colour will result, while, if the mordant is only applied to portions of the cloth, an uneven colour or pattern will come out.

The latter operation is called printing; the former simply dyeing. The printing of cotton cloth or calico has been so well described by Dr. Ure and other eminent chemists, that I need not enter into any general account of this chemical art; it will be sufficient to confine my observations to the details that are specially remarkable in its application to the linen manufacture. So long as seventy or eighty years ago there existed in the north of Ireland a few petty printers, who operated on the home-made fabrics of the farmers, and produced, with no doubt the common indigo, an old fashioned pattern of blue ground with a white spot. This pattern was, I am told, a favourite style with the country girls, and was greatly in vogue in those days, before cheap calico dresses had been introduced. The printing of linens, however, was not an extensive business until very recently. During the last 20 years, from small beginnings, it has increased to an important branch. The printing of linens is not so cheap and expeditious an affair as that of cotton. At present the cost, namely 2d. to 3d. a yard, appears high in proportion to the value of the linens operated on; but as the trade extends, and larger quantities of each pattern can be ordered, this cost can gradually be reduced. The further causes of this increased expense, as compared with cotton, are various. Among the first there is the much greater cost of the preparatory bleaching; next, the greater difficulty of applying the madder dye, the flax fibre being harder and not so absorbent as the other; and, at the last, the increased cost of finishing with the beetles, or special patent machine, instead of the simple pressure through a calender.

Although printed linens cannot be sold at so low a figure by the yard as cotton, I question if in the end they would not be found cheaper. I am told that these linen dresses will wash up well over and over again, and retain the silvery brilliancy of the original colour, while it is generally found that the white ground in the cotton fabric soon loses its original purity, and assumes more or less of a yellow tinge. The flaxen fabric, also, if properly bleached, possesses much greater durability. Owing to this fact, it is the custom to use almost entirely *permanent* colours in printing linen, the article being too valuable to place on it the common *fugitive* colours from ordinary pigments put on low calicos.

There is one advantage the linen fabric has over cotton that it is worth while to mention, for the information of the gentler sex, some of whom have lately met with such frightful accidents from their muslin dresses taking fire; the flax fabric is safe comparatively, being very slow to ignite.

Yet, with all these recommendations, it is singular to find that nearly all the linens printed in Ireland are for the foreign trade, scarcely a piece for home consumption. On the European Continent, in the United States of America, in Mexico and West Indies, these goods are greatly in favour.

On visiting premises where the printing of linens is carried on, we find in general connected therewith some bleaching machinery, as the linens have first to undergo that process. It is, however, a common practice for bleachers to whiten the goods and send them thus to the print works ready for immediate use.

There are two ways of impressing the pattern on the

* See Vol. VIII., p. 407.

goods—the one by blocks of wood applied with the hand, called block printing, the other by copper rollers. The pattern, after first being sketched on paper, is transferred to the smooth surface of these wooden blocks, which, to ensure permanent evenness, are made of four pieces of wood glued together, curiously arranged so as to prevent the casting or crookedness that would occur if in one solid block. On the reverse side of the block are sunk places for the workmen to lift it by.

The pattern being nicely developed on the smooth face, the next point is to arrange it for the stamping process. A few stamps are still made by cutting away the wood and having the pattern somewhat like common printing type, but the improved plan is to work up the pattern in copper.

This operation requires great skill of hand and a nice eye. Copper wire beaten out flat is set in to represent lines, and small pins of copper are driven in to bring out the minute portions.

I need scarcely say that it requires men of considerable taste and education to originate new patterns. The Government Schools of Design were here of considerable service. What a pity such useful institutions should not have received more permanent consideration and support.

The block will be probably nine inches square, and when ready for use the next thing is to prepare and apply the mordant. This is done by mixing it up with starch or gum, to give consistency, and it is then stamped by hand on the white linen, on a table covered with a soft material. This hand process is necessarily rather slow, and only one colour is put on at once, but it suits best in many cases. The mordants vary according to the colour. Those most in use are the ordinary iron liquor, alumina, and indigo.

After the pattern is impressed, the goods are taken to a dry room, called the "ageing room," and are retained there from two to five days, to ripen or set the mordant; black and chocolate requiring double the time of the reds and pinks. From this room the goods descend to a lower one containing vats, filled with a curious compound, the odour of which reminds the visitor very strongly of the farm yard; in fact, it is a weak solution of cow manure, which, it appears, has not been equalled as yet in its peculiar office by any chemical productions. After passing through these vats over rollers, the cloth is well washed, and the gum or starch of the mordant is then quite extracted. The cloth is then ready for the madder dye bath, where it is detained about 2½ hours, revolving on rollers. It is next washed by machinery, then twice soaped and washed again; plunged in a weak bath of chloride of sodium, washed, starched, and finished, either by beetles or by a patent process, same as bleached linens.

The printing by rollers is of course more rapid than by hand blocks, but does not suit all styles. The pattern is cut out of the copper roller like a seal, directly opposite in principle to the block-cutting which stands up like type; the cloth is passed through the mordant stuff and over the rollers, thence to hot cylinders for drying; the rest of the process is the same as just described for block-printing.

Four colours can be put on at once on these machines, each colour requiring simply a separate roller; as many as twelve colours could be put on if required, so that by this system the saving of time is very considerable. Printing in one uniform colour is called padding.

The principal works for printing, near Belfast, are at Clonard and Old-park, and as both establishments have been made gradually more extensive of late, it is fair to presume that the demand for printed linens is on the increase. Some Belfast merchants send goods across to Glasgow, but the local advantages of the Irish companies will probably secure this portion of the trade eventually. I feel greatly indebted to Mr. Fulton, the managing director of the Clonard print works, for the information he gave me on my visit to that place, and for the trouble he took in explaining the rather intricate and peculiar details of this chemical art.

Last autumn Parliament was induced by Mr. Roebuck, to pass an act for regulating labour in bleach-mills, but an

exception was made in favour of the open-air process, so that linen bleach greens are very properly free from useless harassing regulations and humiliating inspection.

ITALIAN EXHIBITION, 1861.

The government of the King of Italy has resolved to hold an Exhibition of Art and Industry at Florence in the ensuing months of September and October. Italy will see for the first time the works of her artists and the products of her industry collected together under the roof of a Crystal Palace. An official announcement has been circulated which specifies the following as the principal features of the exhibition:—

It will be divided into three departments, agricultural, industrial, and artistic. It is intended that Rome and Venice shall both be represented. It is calculated that there will be about 5,000 contributors. In the artistic department the works of artists deceased during the last twenty years will be exhibited, as well as those of living artists. The cattle show will comprise not only the products of the Peninsula but also those of Sardinia and Sicily.

Two thousand workmen are now engaged upon that part of the Palace of Industry which is to hold the works of painters and sculptors. In the machinery department will be exhibited the Politelegrafo Coselli, acting between Florence and Leghorn; also a new motive power discovered by Signors Barsanti and Matteucci, destined perhaps in time to change the present system of locomotion.

In the horticultural department the Victoria Regia in flower, some noble palm trees, and a fine collection of orchideæ are to be exhibited.

The cousin of his Majesty, Prince Carignano, has accepted the Presidency of the Royal Commission for the Exhibition, assisted by the Marquis Ridolfi as acting president, and Professor Careza as secretary. His Majesty the King of Italy will open the Exhibition in person. At the same time a meeting of the Italian savans will be held, which has not taken place for fifteen years. The French naturalists who assemble at Schonberg, as well as the Swiss, are invited to meet their colleagues at Florence.

For those who are fond of sport, the races, and the opening of the Tiro Nazionale for rifle shooting, will take place.

Manufacturers of agricultural implements, both English and others, are specially invited by the Royal Commission to send in specimens of their manufacture. Not only will a place be reserved for the reception and exhibition, but sales will be permitted. A new market is thus thrown open to a branch of industry in which the United Kingdom particularly excels.

INTERNATIONAL EXHIBITIONS.

The Paris correspondent of the *Daily Telegraph*, writes:—

"Some enterprising individuals have started the idea of carrying out the principle of exhibitions to what is called its completion. France commenced periodical industrial expositions at the end of the last century; England made them universal ten years ago. The time is now arrived, say the projectors, to render the latter permanent; and it is said that a company is actually in course of formation to establish a continuous exhibition of the productions of all nations in this city. The idea is not new, but the notion of individual enterprise attempting such an undertaking in France is admitted to be surprising. The project seems to be seriously entertained, and more information is promised soon."

COTTON IN EGYPT.

The *Times* correspondent at Alexandria says:—"Dr. Forbes and Mr. Haywood, the Secretary of the Cotton Supply Association, arrived here by last mail, and in the

course of the next day or two will probably have an interview with the Viceroy.

"There is no doubt that the production of cotton in this country might be very greatly increased, though I do not think that there is any chance of attaining the object by a displacement of other crops. If it were desired to introduce something entirely new, there would no doubt be a large amount of obstinate prejudice to overcome, but it would be a mistake to imagine that the Fellahs do not possess a lively appreciation of the respective profits and advantages they derive from the various crops they are in the habit of growing. If the balance were in favour of cotton, it would require no pressure whatever from without to stimulate its culture in preference to grain, pulse, or other articles. I apprehend it will be found that the production of Egyptian cotton can be increased to any material extent by only two means—the one by introducing the growth of short stapled cottons, whereby a heavier crop would be gathered off the same breadth of land; and the other by bringing fresh lands into cultivation. The first is, of course, a mere question of profit and loss, upon which, as yet, opinions are greatly divided, and which can only be settled by actual experiment. A fair trial must, however, before long be made, and herein the Viceroy, as well as some of the large landed proprietors of his family, may be able to give some useful assistance.

"With regard to an extension of cultivation, the obstacles arise chiefly from the scarcity of hands and of capital. The want of labour might be partially remedied by the introduction of improved machinery, especially for separating the cotton from the seed. The McCarthy gin has already been, to some small extent, brought into use upon the estates of the large landholders, and with a considerable degree of success; but, whether it be owing to mere prejudice or to some more substantial reason, it is found that the greater number of the Manchester spinners object to it, and although there are a few who actually give it the preference over cotton cleaned by the old method, upon the whole the produce of the McCarthy gin has to be disposed of at lower prices, and is, moreover, of much slower sale.

"With regard to the want of capital, the difficulty might be met by offering advances to the villagers on fair terms. A system for supplying money to the fellahs already exists, though to an insufficient extent. The business is chiefly carried on by Greek and Levantine traders; but owing perhaps partly to the great difficulty that is often experienced in obtaining reimbursements, either in money or in goods, the advances are made at such exorbitant rates that even 3 or 4 per cent. per month is considered moderate.

"In this matter, should it be deemed proper to enter into arrangements for the purpose, the Government might possibly render some useful assistance by enforcing and, to some extent, superintending the observance of the contract that might be entered into by the villagers; but I believe that any such undertaking would be altogether foreign to the views of the Cotton Supply Association, and it must be confessed that it would probably be found difficult to carry it on under any system not open to objection."

NATURAL PRODUCTS OF SIAM.

Sir Robert H. Schomburgk, British Consul-General of Siam, contributes to the *Technologist* a report on the vegetable products of that country. Owing to the vast extent of Siam and its geographical situation, lying under the tropics and favoured by periodical rains, these are very numerous. Rice, sugar, and pepper are, however, the staple articles; the first serving not only for home consumption, but a large quantity is exported to China. Several varieties of rice are raised; some account as many as forty, but four species are principally cultivated, namely, the common rice, of a white colour, much resembling the rice of Carolina; the mountain rice; the glutinous, and

the red rice. The first kind is mostly exported. Rice, the principal export, of which in 1858 not less than 100,000 tons were exported, principally to China, is grown over the whole plain of Siam. Nakhon-Yaisi and Petrio are the principal sugar districts; but it is also produced at Paklat, Bangpasoi, Chantibon, and Petchaburi, in considerable quantities. The owners of the mills seldom cultivate the canes themselves, but purchase it standing in the fields from the growers, who have usually money advanced to them by the mill-owners at the commencement of the season, to enable them to plant on their ground; they in return being bound to sell all their cane at a fixed price to the person lending the money, besides paying interest at the usual rate. The cultivation of the sugar-cane has greatly increased. It is mostly in the hands of the Chinese. The extraction of the juice of the cane and its manufacture into sugar are carried on in a very primitive manner, without any of the modern improvements to obtain from the cane the largest possible quantity of a superior quality of sugar. Large forests of teak exist on the Burmese boundaries. The logs, when dry enough to float, are made into rafts and floated down the rivers to Bangkok, where they are usually sawn. The most suitable form for exportation is planks five inches in thickness. The supply has almost entirely ceased, owing to the high prices and scarceness of wood. The tree is now fully 50 per cent. higher than it was in former years. A number of woods, the produce of the forests in the interior of Siam, might become of importance, were their qualities for naval or civil architecture, or as woods proper for ornamental purposes, sufficiently known. Amongst others the Takieng, which, as far as regards size and quality, might become a rival to the teakwood, possessing, moreover, the great advantage that it may be easily bent by artificial means. Trees belonging to the pine genus are not uncommon, principally on the eastern coast of the Gulf of Siam, which might furnish liquid bitumen for the preparation of pitch or tar. Amongst dyewoods, the principal is the sapan (*Casuarina sappan*), of which large quantities are exported. It is the spontaneous produce of the forests of the northern provinces of Siam and the frontier hills dividing that country from Tenasserim. There are enormous forests of this wood in the upper parts of the country and down the west coast of the Gulf of Siam. The greater part of the supplies brought to Bangkok comes from Soupan and Bang Chang, also from the west coast of the Gulf. A beautiful dye of a brilliant yellow is procured from the heart of the jack-tree (*Artocarpus integrifolia*). This wood deserves a closer examination whether it might not become of importance to commerce, not only as a dye, but likewise to the cabinet maker. The natives obtain a fine red dye from the roots of the *Morinda citrifolia*. The wood of a species of mangrove yields a red colour, and the bark of the common kind (*Rhizophora Mangle*) is used in tanning, and a small quantity of it is exported. Several species of plants furnishing indigo grow spontaneously in the interior. An attempt has recently been made by a British subject to manufacture the dye from these plants, but he has not succeeded in rendering it profitable, in consequence of which he has given up the speculation. Wood oils, which more properly ought to be called resinous balsams, are yielded by *Dipterocarpus trinervis* and allied species. They give to teakwood a fine polish, and are substituted in house decorations for the coloured paints for verandahs, window-sashes, doors, &c. The balsamic resins, which are yielded by numerous trees of the forests of Siam, are spoken of as deserving much more attention than they have hitherto received. Amongst the fibres of plants growing in Siam useful for textile fabrics, a species of hemp has been exported which is said to be prepared from a plant resembling a nettle in appearance. This has probably been obtained from the *Urtica tenacissima*, the fibres of which have been pronounced identical with the celebrated China grass. The real hemp is likewise cultivated, not so much for its fibres, as for extracting its intoxicating and narcotic qualities, for the preparation of the haschisch

of the Arabs or guncha of the Siamese, which is used for the same purpose as opium, producing, when being smoked, exhilarating effects, with subsequent prostration and sleep. The cultivation of cotton has not received that attention which it deserves. Small quantities are produced in the Laos country, samples of which Sir R. Schomburgk has transmitted to her Majesty's government. The great distance of the country where it is at present cultivated, and the difficulty of transport to Bangkok from the interior, have no doubt injuriously operated in preventing the development of the trade. He says, "Judging from the countries that produce cotton which I have visited—namely, the United States, the West Indies, and Guiana—I see no reason why the alluvial districts of Siam should not produce as fine a cotton as the countries previously stated. A want is seriously felt to effect an extensive cultivation—namely, the scarcity of labourers. The distance of the country where cotton is cultivated from Bangkok is very great; and as the article is so bulky for transport in canoes down the river, this is one of the circumstances which has operated against a greater development of this trade. To obviate this difficulty in some degree, her Majesty's government has included amongst the presents forwarded to the sovereigns of Siam a hydraulic press, to compress the cotton into bales."

IMPLEMENTS OF WAR.

The annual meeting of the members of the Institution of Mechanical Engineers was opened at Sheffield on Wednesday, the 31st ult.

Sir Wm. ARMSTRONG, President, delivered an address. After sketching the history of steam inventions, he said:—In thus glancing at the history of mechanical science during the last eighty years, we see how entirely our successes have been based upon the possession of that metal (iron) which the Author of nature has supplied us with in the greatest abundance. I have hitherto spoken only of the mechanical arts as applied to the purposes of peace, but I have yet to refer to the darker side of the picture in speaking of their application to the purposes of war. Our war-like neighbours, the French, always forward in everything appertaining to war, have of late years devoted their energies to two most important subjects—the rifling of ordnance and the application of defensive armour to ships. Their advances have necessitated similar steps on our part, and we have certainly no reason to suppose that we are behind them in the race. With the first of these subjects I have been personally much concerned, and I have also had opportunities of observing the merits and defects of the various kinds of armour plates with which experiments have been made by the direction of her Majesty's government. I need scarcely say that up to the present time, cast iron has been almost exclusively employed in the construction of heavy ordnance; but guns made of that material have not been found adequate to resist the more severe strain incident to the use of elongated rifled projectiles. This inadequacy of strength becomes the more decided as we increase the magnitude of the gun, and since a growing demand exists for more powerful artillery, the use of cast iron for its construction seems to be entirely precluded. It is said, and I believe with truth, that in America the manufacture of cast iron ordnance has been so far improved by applying water to cool the casting from the interior as to enable serviceable guns of this material to be produced of much larger bore than have been made in England. But it appears that these guns have not been rifled, and are only intended to be used with hollow projectiles. This success, therefore, affords no reason for coming to a different conclusion as to the unfitness of cast iron for the construction of rifled guns designed to project solid shot, especially when the dimensions are large. Even when strengthened by wrought iron hoops, the tendency of cast iron in a gun is to become weaker by every succeeding discharge. This is owing to minute fractures occurring in the bore, generally in the vicinity of the vent,

and gradually extending until they terminate in the rupture of the gun. If, therefore, cast iron guns are to be utilized at all as rifled ordnance, it can only be by confining their use to hollow projectiles and light charges; but, if the same indulgence were extended to wrought iron guns, equal efficiency would be obtained with half the weight of metal, and on this ground alone the superiority of the latter is decisive. After stating the difficulties with regard to wrought iron, Sir W. Armstrong said—It will be a great era in metallurgy when a material possessing the toughness and ductility of wrought iron, combined with the homogeneous character of a cast metal, can be economically supplied in large blocks. But whatever the march of improvement may effect, I doubt whether such blocks can yet be produced at a cost which would admit of their extensive application. I am glad, however, to see that papers are to be read at this meeting which may be expected to bear upon this important subject. With regard to the great question of the ultimate effect of artillery against ships protected by defensive armour, I believe that whatever thickness of iron may be adopted, guns will be constructed capable of destroying it. At the same time I am of opinion that iron-plated ships will be infinitely more secure against artillery than timber ships. The former will effectively resist every species of explosive or incendiary projectile, as well as solid shot from all but the heaviest guns, which can never be used in large numbers against them. In short, it appears to me to be a question between plated ships or none at all, at any rate so far as line-of-battle ships are concerned. With respect to the quality of the material best adapted to resist the impact of shot, this subject is engaging much attention in the town of Sheffield and the iron districts generally. So far as my observation and experience go, I may say that hardness and lamination are the conditions most essential to avoid. In striking a plate the tendency of the shot is to fracture rather than to pierce the material. When penetration is effected, the hole is of a broken character, and not such as would be made by the cutting action of a punch. The softer, therefore, the iron, the less injury it will sustain, and I apprehend that steel, in every form, will, from its greater hardness, be found less effective than wrought iron, while its cost would be very much greater. As regards lamination, it has been clearly ascertained that a given thickness of iron, made up of successive layers of thin plates, is very much weaker for the purpose of armour than the same thickness in the solid form. But a laminated plate, by which I mean a plate having the layers composing it imperfectly united, must be regarded as an aggregation of separate plates, so that the strength derived from continuity is wanting. If this tendency to lamination could be obviated, rolled plates would, in my opinion, be preferable to forged, since the iron would acquire a more fibrous condition, but the existence of this liability appears to turn the scale in favour of forging. I hope the time is far distant when these great questions concerning attack and defence may receive a practical elucidation in actual warfare; but I trust that in the course of our efforts to solve them, discoveries may be made which will be as useful for the purposes of peace as for those of war.

Proceedings of Institutions.

EBBW VALE LITERARY AND SCIENTIFIC INSTITUTION.—The report for the past year states that with but one exception, a marked falling off may be observed in all the departments connected with the Society. The number of subscribers, which at the end of June, 1859, amounted to 223, and at the end of June, 1860, to 205, has this year diminished to 188, showing a diminution in two years of 35, or nearly 20 per cent. Those who have paid during the various quarters of the last year are:—First quarter, 209; second quarter, 218; third quarter, 206; fourth quarter, 183. The depressed state of the trade in the

neighbourhood, and the constant changes which necessarily occur amongst the residents of such districts as this, may account in a measure for some retrograde movement occasionally; but the committee cannot but feel that to the absence of energy, or of a due appreciation of the advantages accruing to members, must be attributed the want of success which they have this year to record. The important subject of classes for mutual improvement and instruction has totally failed, and it is remarkable that amongst a population numbering nearly 10,000, the advantages of such means of advancement are not recognised. In common with many Institutions the finances have suffered by the delivery of lectures. Those of a literary and scientific character have invariably been attended by a loss, but this year the sub-committee appointed to superintend this department, observing the ill-success which has accompanied their endeavours, have only ventured upon a few, and those of a light and entertaining nature. By these a deficit of £7 7s. 2d. has been sustained, and the committee consider that perhaps a wise discretion has been exercised by refraining from involving the Institution in further loss. The annual *soirée*, which took place at the commencement of the year, was of a highly pleasing and instructive character, and appeared to give much satisfaction to those who attended it. Financially, however, this was a failure, and the funds suffered to the amount of £6 2s. 6d. In consequence of the distance from any town, the committee have been often seriously inconvenienced by not being able to procure a good instrument on the occasion of a musical entertainment. An opportunity, however, offered itself this year for the purchase of an excellent pianoforte, and two amateur concerts were given towards defraying the expenses of its purchase, a sum of £28 5s. 2d. being thus realised. The remaining £34 15s. 10d. has been kindly lent without interest; and the committee congratulate the members on possessing an instrument of their own, whereby the expense and risk of hiring are avoided; and an opportunity for practice is daily afforded them during one hour in the day, viz., from 3 to 4 p.m., an hour when the rooms are less frequented; and they hope that this new source of rational amusement which has been opened will have the effect of attracting new members. The hon. librarian reports that, notwithstanding the falling off in the number of subscribers, the issue of books has increased from 2,497 to 2,646. The classification is as follows:—History, English 120, Welsh 24; Biography, English 158, Welsh 23; Voyages and Travels, English 156, Welsh 10; Science and Philosophy, English 120, Welsh 15; Tales and Novels, English 851, Welsh 10; General Literature, English 703, Welsh 111; Religious Literature, English 102, Welsh 64; Poetry, English 68, Welsh 111; total, English 2,278, Welsh 368. 40 volumes have been rebound, and two volumes repaired—35 books (bound periodicals) have been added to the library, making a list of 1,382, of which 1,224 are English, and the remaining 158 Welsh. The museum has received a few additions during the year, and has not been attended by any outlay. An abstract of the accounts of the society shows that the expenditure has been £95 16s. 5d., and that there is a balance due to the treasurer of £22 14s. 8d.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Par.
Num.

Delivered on 18th July, 1861.

431. Postal Revenue (Ireland)—Return.
440. New Law Courts—Copy of Treasury Minute.
251. Bills—Metropolitan Building Act Amendment.
252. Bills—Public Works (Ireland).
253. Bills—Crown Suits Limitation (amended).
Affairs of Syria—Correspondence (Part 2).
Public General Acts—Caps. 28, 29, 30, 31, 32, 33 and 34.

Delivered on 19th July, 1861.

427. Naval Medical Supplemental Fund Society—Return.
429. Municipal Boroughs (Ireland)—Paper.
432. Chamber of London—Annual Accounts.

441. Courts of Justice Building Act (Money) Bill—Minutes of Evidence.
254. Bills—Episcopal and Capitular Estates Act Continuance, &c.
255. Bills—Gunpowder, &c. Act Amendment.
Census of Ireland for 1861—Enumeration Abstracts.
Colonial Possessions (Part I., West Indies and Mauritius)—Reports.
Delivered on 20th and 22nd July, 1861.

422. Jersey—Papers.
436. Enfield Factory—Return.
437. Gentlemen-at-Arms and Yeomen of the Guard—Return.
444. Public Institutions—Return.
441. Courts of Justice Building Act (Money) Bill—Minutes of Proceedings of the Committee.
332 (2). Poor Removal (Rebecca Kearney)—Further Return.
428. Police Grant—Return.
433. Salmon and Trout Fisheries Bill—Minutes of Proceedings of the Committee.
443. Superior Courts of Law (Fee Fund)—Paper.
449. China War (Vote of Credit)—Estimate.
245. Births, Deaths, and Marriages (Ireland) Bill, &c.—Report from the Committee.
256. Bill—Public Houses (Scotland) Acts Amendment (as amended by the Select Committee).

Delivered on 23rd July, 1861.

404. Outrages (Kilmacrennan)—Return.
410. Education (Dissenters' Schools)—Paper.
448. Public Accounts—Fourth Report from Committee.
450. Navy (Iron Ships, &c.)—Supplementary Estimate.

Delivered on 24th July, 1861.

439. Chatham Dockyard Extension—Report from Committee.
453. Civil Services—Supplementary Estimate, Class 1, Vote 9.
454. Civil Services—Supplementary Estimate, Class 4, Vote 15.
257. Bills—Newspapers, &c.
258. Bills—Public () Site.
259. Bills—Revenue Departments Accounts.
260. Bills—Lunatics (Scotland).
261. Bills—Treasury Chest Fund.

Delivered on 25th July, 1861.

203. County Treasurers—Abstract of Accounts.
435. Militia Volunteers—Return.
447. Education (Ireland)—Annual Report of the Commissioner.
457. Supply, &c.—Return.
461. Militia Estimates—Report from Committee.
462. Army—Supplementary Estimate (Volunteer Corps).
463. Royal Atlantic Steam Navigation Company—Report from Committee.
262. Bills—Inland Revenue (amended).
263. Bills—Stamp Duties on Probates, &c. (amended).
Turkey—Treaty of Commerce and Navigation.

Delivered on 26th July, 1861.

434. Small Debt Courts (Scotland)—Return.
465. Post-office (Isle of Man)—Returns.
Delivered on 27th July, 1861.

265 (1). East India (Moral and Material Progress and Condition)—Paper, Part 2.

442. Criminal Prosecutions, &c.—Return.

265. Bills—Corrupt Practices Prevention Act (1854) Continuance.

266. Bills—Metropolitan Police Receiver.

Dated 29th July, 1861.

38 (6). Trade and Navigation Accounts (30th June, 1861).
393. Police (Scotland)—Paper.
460. Education of Destitute Children—Report from Committee.
267. Bills—East India Loan (No. 2).
269. Bills—Parochial Offices.
270. Bills—Local Government Supplemental (No. 2).

Delivered on 30th July, 1861.

455. Metropolitan District—Returns.
458. Aberavon Borough—Return.
469. Post-office (Londonderry, &c.)—Return.
268. Bill—Militia Billots Suspension.

Public General Acts—Caps. 35, 36, 37, 38, 39, 40, 41, 42, 43, and 44

SESSION, 1860.

383 (C 2). Poor Rates and Pauperism—Return (C).

Delivered on 31st July, 1861.

446. Registry of Deeds Office (Dublin)—Return.
451. Plumstead Cemetery—Return.
473. Foreign Wine—Account.
482. Dockyard Accounts—Return.
483. St. Paul's Cathedral, London—Return.

271. Bill—Volunteers, Tolls Exemption (No. 3).

Delivered on 1st August, 1861.

452. East India (China War)—Account.
472. Fines and Penalties (Ireland)—Abstract of Accounts.
481. Fortifications—Account.
326. Finance Accounts—Classes 1 to 8.
463. Royal Atlantic Steam Navigation Company—Report, and Minutes of Evidence.
272. Bills—Probates and Letters of Administration Act (Ireland) Amendment.
273. Bills—Grand Juries, &c. (Ireland) (amended).
Census of Scotland, 1861—Tables.

Delivered on 2nd August, 1861.

Tariffs—Supplemental Return for France.

Delivered on 3rd and 5th August, 1861.

474. Poor Relief (England)—Third Report from Committee.

480. Coinage—Accounts.

488. National Schools (Ireland)—Return.

497. Accrington (Easier Dues)—Return.

501. War-office—Return.

513. Lighthouses Abroad—Account.

324 (A II.) Poor-rates and Pauperism—Return (A).

487. Treasure Trove (Return).

498. Registry of Deeds Office (Dublin)—Returns.

500. Redundant List (Public Departments)—Return.

476. Metropolis Local Taxation—Third Report from Committee.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[From Gazette, August 2nd, 1861.]

Dated 24th July, 1861.

1859. R. Threlfall, Bolton—Imp. in machinery or apparatus for spinning cotton or other fibrous material.

1861. J. Platt and W. Richardson, Oldham—Imp. in machinery or apparatus commonly called "gins," for cleaning cotton from seeds.

1863. W. Longmaid, Inver Galway, Ireland—Imp. in the manufacture of iron.

[From Gazette, August 9th, 1861.]

Dated 6th June, 1861.

1434. S. C. Lister and J. Warburton, Bradford—Imp. in treating spinning and doubling yarns.

Dated 25th June, 1861.

1628. J. Fowler, jun., Leeds—Imp. in machines for ploughing or tilling land by steam power.

Dated 27th June, 1861.

1646. J. C. Smart and A. Aitchison, Scarborough—Imp. in the manufacture of charcoal.

Dated 29th June, 1861.

1664. W. Clark, 53, Chancery-lane—A new locomotive apparatus having a movement resembling walking. (A com.)

Dated 3rd July, 1861.

1684. H. B. Barlow, Manchester—Certain imp. in machinery for spinning. (A com.)

Dated 6th July, 1861.

1720. H. Schutt, Bradford—Imp. in spinning frames for spinning wool, cotton, silk, or flax, and other fibrous material. (A com.)

Dated 9th July, 1861.

1736. G. S. Parkinson, 10, Lambton-terrace, Kensington—Imp. in perforated materials in combination with india-rubber.

Dated 11th July, 1861.

1780. O. J. T. Gosself, Moorgate-street—An improved combined locomotive engine and carriage. (A com.)

Dated 17th July, 1861.

1794. A. W. Harnett, 97, Guildford-street, Russell-square—Imp. in the construction of steam engines, air engines, and pumps.

Dated 20th July, 1861.

1828. M. Gilbert, Manchester—Certain imp. in boots and shoes or other covering for the feet.

1830. R. Thatcher, Oldham—Imp. in lubricators for lubricating the various parts of machinery.

Dated 22nd July, 1861.

1838. J. B. Wood, Broughton, near Manchester—Imp. in the manufacture of shuttle pickers.

Dated 23rd July, 1861.

1844. T. Gray, 19, Hill-cottages, Union-road, Wandsworth—An improved mode of preparing flax from old materials for spinning and other purposes.

1848. F. Hirschfeld, 24, Cannon-street West—Imp. in ornamenting or decorating articles of iron. (A com.)

Dated 24th July, 1861.

1850. F. Hirschfeld, 24, Cannon-street West—Imp. in locks and keys. (A com.)

1852. F. Mills, Heywood, near Manchester—Certain imp. in machinery for carding cotton and other fibrous materials.

1856. W. E. Gedge, 11, Wellington-street, Strand—Imp. in the preparation and clarification of the saccharine matters obtained from beet-root, sugar cane, Indian millet, and other sacchariferous vegetables or plants. (A com.)

1858. A. Wood, Lewes—Imp. in apparatus employed for fermenting purposes in brewing beer, as also for storing beer and for general purposes of fermentation.

1860. A. J. Seitz, Newcastle-upon-Tyne—Imp. in the drying of bricks and other articles manufactured of fire-clay or common clay, and in the construction of drying rooms for such purpose.

1862. H. Cook, Manchester—Improved apparatus for punching or marking the pattern cards used in weaving figured fabrics.

Dated 25th July, 1861.

1866. M. Klotz, 29, Boulevard St. Martin, Paris—A new application of certain products to ornamenting tissues, papers, and other surfaces.

1868. R. Kelly, Wilden, near Stourport, and J. Shakespeare, Dudley—New or improved machinery to be used in the manufacture of tin plates and tene plates, and iron plates coated with lead.

1870. J. Simmons, Wellington-lane, Battersea—Imp. in the construction of buildings to enable them to withstand the action of fire.

Dated 26th July, 1861.

1874. F. Johnson and B. Hockin, North-street, Smith's-square, Westminster—Imp. in securing or fastening nuts for railway fish plates and for other purposes.

Dated 27th July, 1861.

1878. W. E. Gedge, 11, Wellington-street, Strand—An improved weighing machine. (A com.)

1880. R. E. Garrood, High-street, Chelmsford—Imp. in mitre boxes and shooting boards.

1882. W. H. Harfield, 2, Royal Exchange-buildings—Imp. in constructing and propelling ships and vessels.

1884. C. E. Amos, The Grove, Southwark, and J. Francis, Penrhyn Slate Quarries, near Bangor—Improved machinery for dressing slates.

Dated 29th July, 1861.

1890. R. Riley, Hull—Imp. in fused signals, and in means or apparatus for applying or placing them and fog signals on the rails of railways from the van of a train in motion.

1892. C. C. J. Guifroy, Lille, France—Imp. in preparing medicinal substances and compounds from the livers of cod and other salt water fish.

1894. E. H. Johnson, St. Mary's Cray, Kent—Improved machinery or apparatus for disintegrating, crushing, or drawing out vegetable fibres.

Dated 30th July, 1861.

1896. T. Saunderson, 76, Fincross-street, Duxton-road, Kingland—A pasteboard, millboard, and cardboard medal for advertising purposes in the form of handbills.

1898. W. H. Ash, London, Canada West—Imp. in reaping and mowing machines. (A com.)

1902. J. M. Hart, 76, Cheapside—Imp. in the arrangement or construction of parts of locks or fastenings.

Dated 31st July, 1861.

1904. H. J. Holland, Bond-street, and W. Payton, Johnson-place, Harrow-road—Imp. in breech-loading fire arms.

PATENTS SEALED.

[From Gazette, August 9th, 1861.]

August 9th.

346. N. Thompson.	379. J. Garforth.
351. W. Oldfield.	380. H. D. P. Cunningham.
354. J. Bowron.	383. M. A. Prenslan.
356. W. Corbett.	384. G. J. W. C. T. Bradbury and J. Lawton.
357. C. Prater.	386. A. Lecat.
358. W. Maltby.	387. A. Senior.
360. W. Brown.	388. M. B. Westhead.
365. C. S. Roskilly.	391. E. H. Baré and C. J. Blondel.
364. T. Lawden and T. Jones.	392. J. Horn.
370. J. S. Blake, G. C. Ling-ham, and J. Nicklin.	395. N. Nussey.
372. W. Roberts.	400. E. F. Barnes.
373. J. Poole, J. Wright, F. S. Hemming, & G. Searby.	449. J. Reeves.
374. A. Ripley and W. H. Stevenson.	559. G. H. Birkbeck.
378. E. Rimmel.	572. G. Eskholme.
	1033. P. C. Lefol.
	1034. C. Callebaut.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[From Gazette, August 9th, 1861.]

August 5th.

1794. S. Carey.	1816. W. Spence.
1804. J. Walker.	1868. L. A. Herrmann and E. I. E. Herrmann.

[From Gazette, August 13th, 1861.]

August 8th.

1809. T. Ingram.	August 10th.
1836. G. Metzler and J. Waddell.	1839. A. J. Paterson.
	1847. F. J. Manceaux.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[From Gazette, August 9th, 1861.]

August 6th.

1725. G. A. Cox.	August 7th.
	1735. H. Turner.
	1775. J. and C. M. Greaves.

[From Gazette, August 13th, 1861.]

August 9th.

1812. P. A. Le Comte de Fontainemoreau.	1947. J. Westwood and R. Baillie.
	August 10th.
	1766. J. Petrie, Jun.